## (19) World Intellectual Property **Organization**

International Bureau



550162

## 

(43) International Publication Date 7 October 2004 (07.10.2004)

(10) International Publication Number WO 2004/085621 A2

(51) International Patent Classification7:

C12N

(21) International Application Number:

PCT/US2004/008866

(22) International Filing Date: 22 March 2004 (22.03.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/456,735

20 March 2003 (20.03.2003)

(71) Applicant (for all designated States except US): DANA-FARBER CANCER INSTITUTE, [US/US]; 44 Binney Street, Boston, MA 02115 (US).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): POLYAK, Kornelia [US/US]; 1856 Beacon Street, #6F, Brookline, MA 02445-1946 (US). PORTER, Dale [US/US]; 409 Marlborough Street, Apt. 45, Boston, MA 02115 (US). ALLINEN, Minna [FI/US]; -.
- (74) Agent: MACPHAIL, Stuart; Fish & Richardson P.C., Suite 2800, 45 Rockefeller Plaza, New York, NY 10111 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: GENE EXPRESSION IN BREAST CANCER

(57) Abstract: The invention features nucleic acids encoding proteins that are expressed at a higher or a lower level in breast cancer cells than in normal breast cells or in a cell of one grade or stage of breast cancer than in a cell of another grade or stage of breast cancer. The invention also includes proteins encoded by the nucleic acids, vectors containing the nucleic acids, and cells containing the vectors. In another aspect, the invention features methods of diagnosing and treating breast cancers of various grades and stages.

